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Moesgaard, Sophia Gry; Løwert, Charlotte Klostergaard; Zois, Nora Elisabeth; Falk, Bo Torkel; Rasmussen, Caroline Elisabeth; Fuentes, V. Luis; Jones, I.D.; Olsen, Lisbeth Høier

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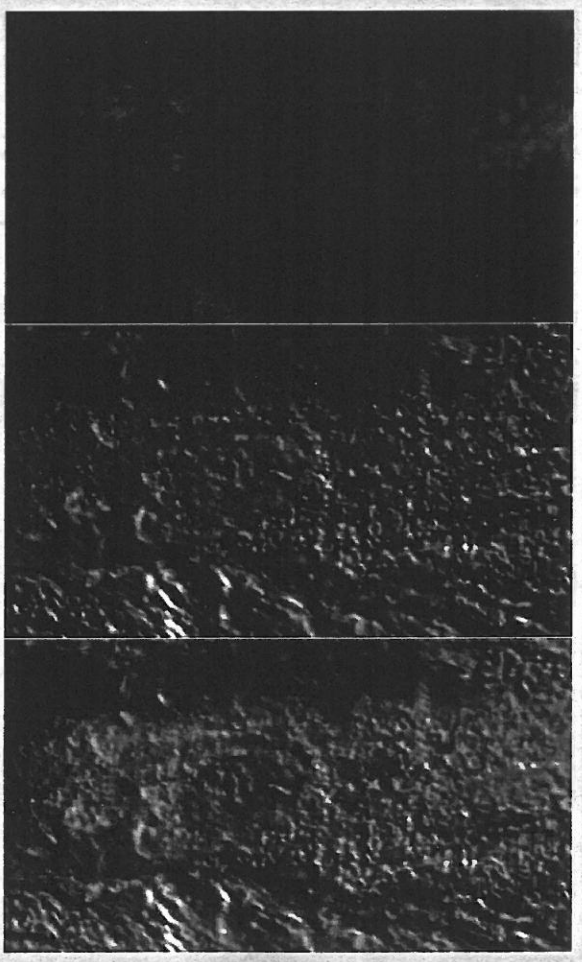

REGION H Rigshospitalet

DECREASED FLOW-MEDIATED VASODILATION IN DOGS WITH MODERATE-SEVERE MYXOMATOUS MITRAL VALVE DISEASE

SG Moesgaard[1], C Klostergaard[1], NE Zois[1], TB Falk[1], CE Rasmussen[1], V Luis Fuentes[2], ID Jones[2], LH Olsen[1].

1. Department of Basic Animal and Veterinary Sciences, The Faculty of Life Sciences, University of Copenhagen, Denmark. 2. Department of Clinical Veterinary Sciences, Royal Veterinary College, University of London, UK.

Introduction: Myxomatous mitral valve disease (MMVD) is a common heart valve disease in dogs especially the Cavalier King Charles Spaniels (CKCS). Studies of plasma biomarkers of endothelial function suggest that CKCS with MMVD have endothelial dysfunction. However, biomarkers measure endothelial function indirectly and are affected by other factors.

Aim: The aim of this study was to measure flow-mediated vasodilation (FMD, an ultrasound technique used for measuring human endothelial function) in dogs with MMVD.

Materials and Methods: FMD was measured at 4 stages of MMVD: Group (1): 20 CKCS with no to minimal mitral regurgitation (MR); Group (2): 14 CKCS with mild MR; Group (3): 15 CKCS with moderate-severe MR: Group (4): 10 CKCS with clinical signs of heart failure due to MMVD. All dogs underwent a physical examination, blood sampling and echocardiography prior to FMD measurement.

Results: A decreased FMD response was found with group (3) (5.86±3.46%) and group (4) (4.98±2.44%) compared with group (1) (8.26±5.40%) and group (2) (8.98±3.41%). When the FMD responses in groups 1 and 2 were pooled and compared to pooled responses of groups 3 and 4, the FMD was significantly decreased in groups 3+4 (8.55±4.92% vs groups 1+2, 4.90±3.53%, P=0.007). The FMD response decreased with increasing MR (P=0.02). The FMD response did not correlate with body weight, age or ambient temperature.

Discussion and conclusion: These results support the previous findings in plasma biomarker studies indicating that CKCS with severe stages of MMVD have endothelial dysfunction.